

47H

SPKR-451661





## INTRODUCTION

The Heathkit Model HS-1661 Station Speaker is an accessory unit for communications receivers. The speaker is a 5" x 7" oval type, mounted on a baffle board. A 5-foot shielded cable with a phono plug on the free end is wired to the speaker.

The cabinet color and design match that of the latest Heathkit Transceivers and Receivers. If you want to set the

Station Speaker on top of other equipment, and do not want to tilt the cabinet, you can remove the plastic foot spacers. Two #6 x 3/4" wood screws are provided so you can mount only the rubber feet on the cabinet front.

These features provide you with an attractive Station Speaker to use with your transceiver or receiver.

## PARTS LIST

KEY	QTY.	DESCRIPTION
No.		

PART
No.

### CABINET-SPEAKER GRILLE

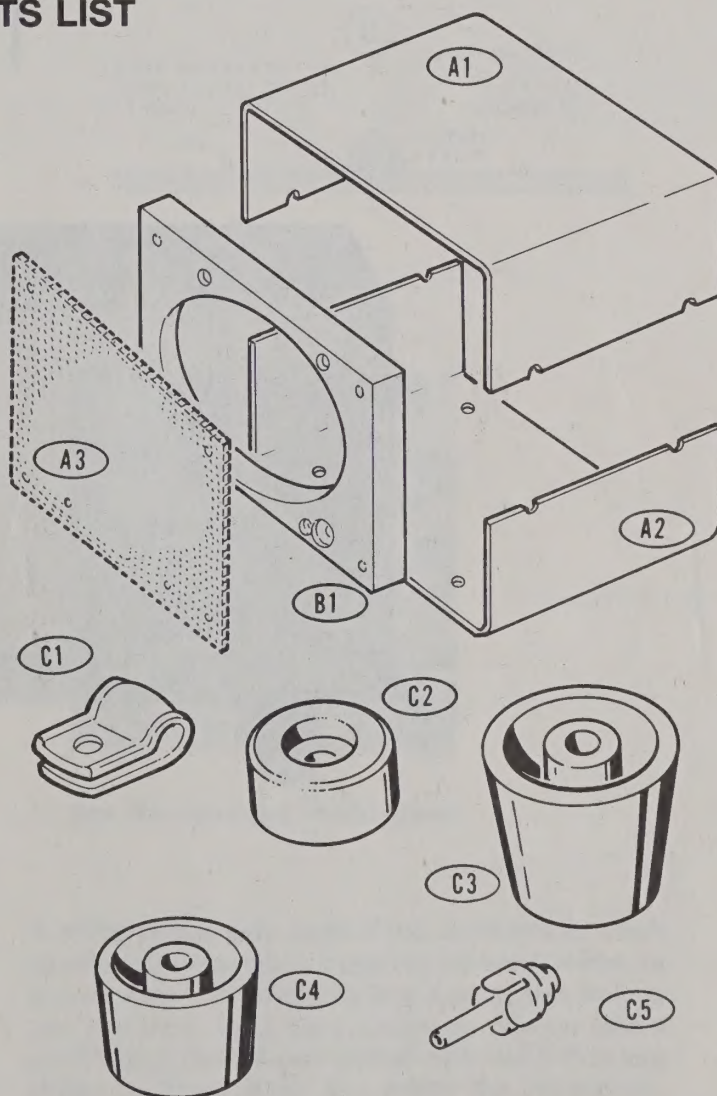
A1	( )	1	Top cabinet half	90-1164-2
A2	( )	1	Bottom cabinet half	90-1165-2
A3	( )	1	Speaker grille	209-77-1

### SPEAKER-BAFFLE BOARD

	( )	1	Speaker	401-172
B1	( )	1	Baffle board	94-562

### CLAMP-FEET-SPACER-PLUG

C1	( )	1	Cable clamp	207-5
C2	( )	4	Rubber foot	261-9
C3	( )	2	Large spacer	255-59
C4	( )	2	Small spacer	255-716
C5	( )	1	Phono plug	438-4





# *instructions*

FOR THE

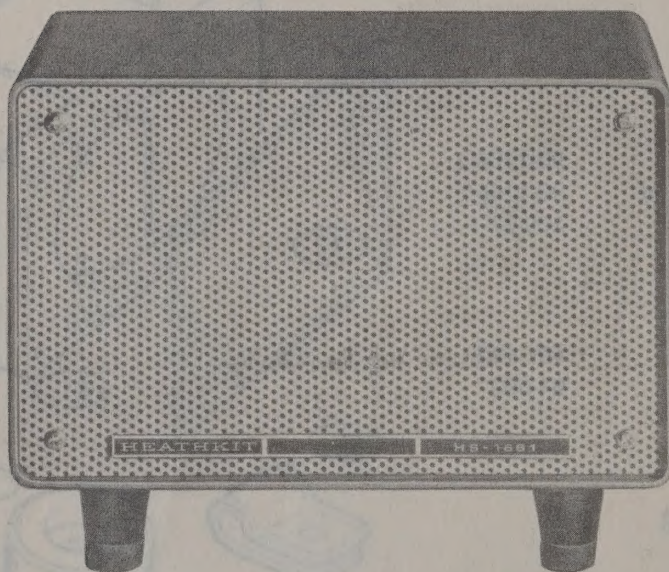


## STATION SPEAKER

MODEL HS-1661

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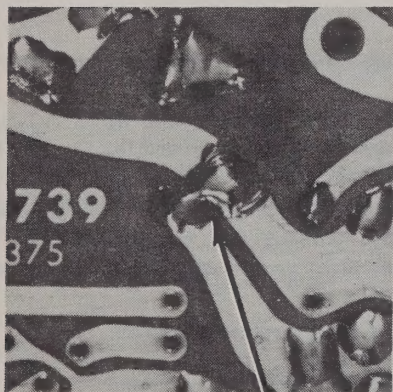
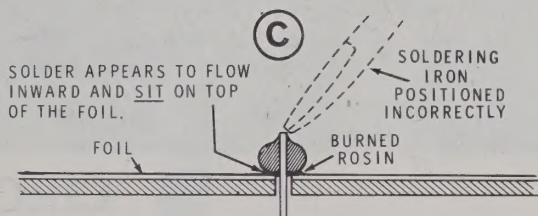
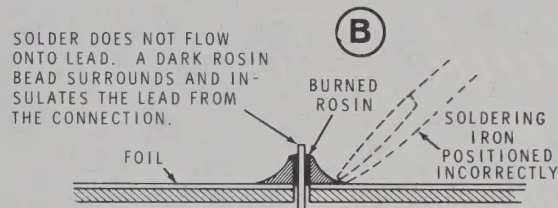
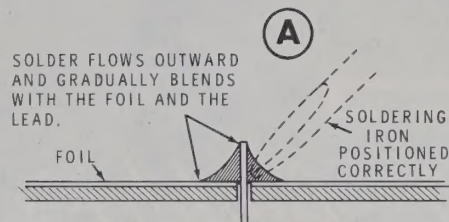


## To Check a Connection:

**Be sure the solder made a good electrical connection.** When both the lead and the circuit board foil are heated at the same time, the solder will flow onto the lead and the foil evenly. See Illustration A. The solder will then make a good electrical connection between the lead and the foil.

When the lead is not heated sufficiently, the solder will not flow onto the lead as shown at B. Reheat the connection and, if necessary, apply a small amount of additional solder to obtain a good connection as shown at A.

When the foil is not heated sufficiently, the solder will blob on the circuit board as shown at C. Reheat the connection and, if necessary, apply a small amount of additional solder to obtain a good connection as shown at A.



A solder bridge  
between two adjacent foils ..... How the connection should appear.



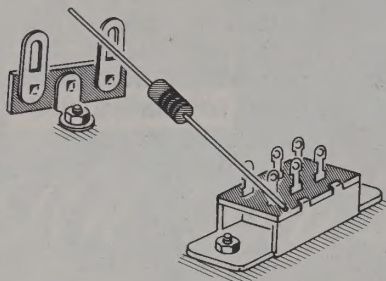
**Be sure you did not make any solder bridges.** Due to the small foil area around the circuit board holes and the small areas between foils, you must use the utmost care to prevent solder bridges between adjacent foil areas.

A solder bridge may occur if you accidentally touch an adjacent connection, if you use too much solder, or if you "drag" the soldering iron across other foils as you remove it from the connection. Always take a good look at the foil area around each lead before you solder it. Then, when you solder the connection, make sure the solder remains in this area and does not bridge to another foil. This is especially important when the foils are small and close together.

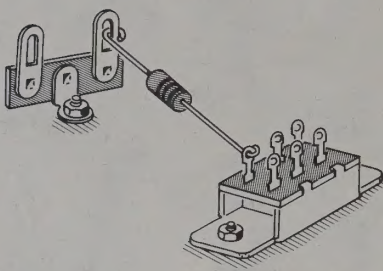


# CHASSIS WIRING

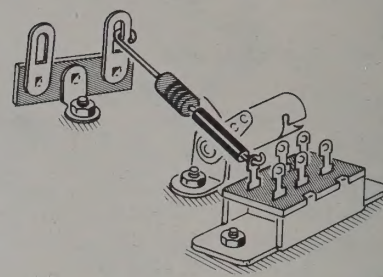
## To Install a Part:



1. Cut the leads to the proper length.



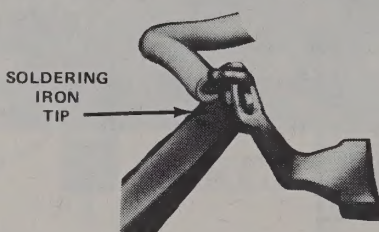
2. Fasten the lead ends.



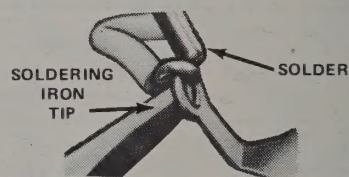
NOTE: Use sleeving when it is called for to provide insulation.

## To Solder a Connection:

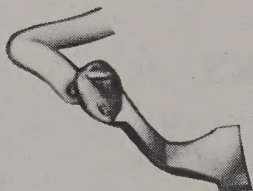
1. Heat both the wire and the connection point; do not burn the insulation on the wire.



2. Apply only enough solder to thoroughly wet both the tip and the connection.



3. Let the connection harden before moving the wire. The connection should be smooth and bright.



4. Check the connection. Poor connections look crystalline and grainy, or the solder tends to blob. Reheat the connection if it does not look smooth and bright.



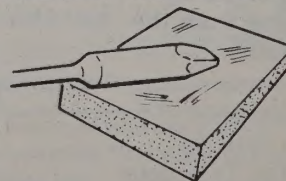
## Remember:

Soldering abbreviations are given in the steps. (NS) means not to solder because other wires will be added later. "S-" with a number, such as (S-3), means to solder the connection. The number following the "S" tells how many wires are at the connection. (Where a wire passes through a connection and goes on to another point, it counts as two wires...S-2).

When there are several wires at a connection, be sure all of them are soldered.

Good solder connections are MOST IMPORTANT: 90 percent of all service problems are caused by poor soldering.

Keep the soldering iron tip clean. Wipe it often on a wet sponge or cloth; then apply solder to it to give the entire tip a wet look. This "tinning" process will protect the tip and enable you to make good connections. When the solder tends to "ball" or not stick to the tip, the tip needs to be cleaned and retinned.



Use rosin core, radio-type solder (60:40 or 50:50 tin-lead content) for all soldering in the kit. The Warranty will be void and we will not service any kit in which acid core solder or paste fluxes have been used.



## STEP-BY-STEP ASSEMBLY

Before you start to assemble this kit, read the wiring, soldering, and step-by-step assembly information in the "Kit Builders Guide."

### SPEAKER MOUNTING

Refer to Pictorial 1 for the following steps.

**CAUTION:** The cone assembly and center dome of the speaker are quite fragile. Therefore, handle the speaker carefully and place it face down on a clean surface until it is installed. Be especially careful that you do not puncture the speaker cone when you install mounting screws.

- ( ) Position the baffle board as shown.
- ( ) Mount the speaker to the baffle board as shown. Use four 6-32 x 1-1/4" flat head screws, four small #6 flat

washers, four #6 lockwashers, and four 6-32 nuts. Be sure to position the speaker lugs as shown.

### SPEAKER GRILLE MOUNTING

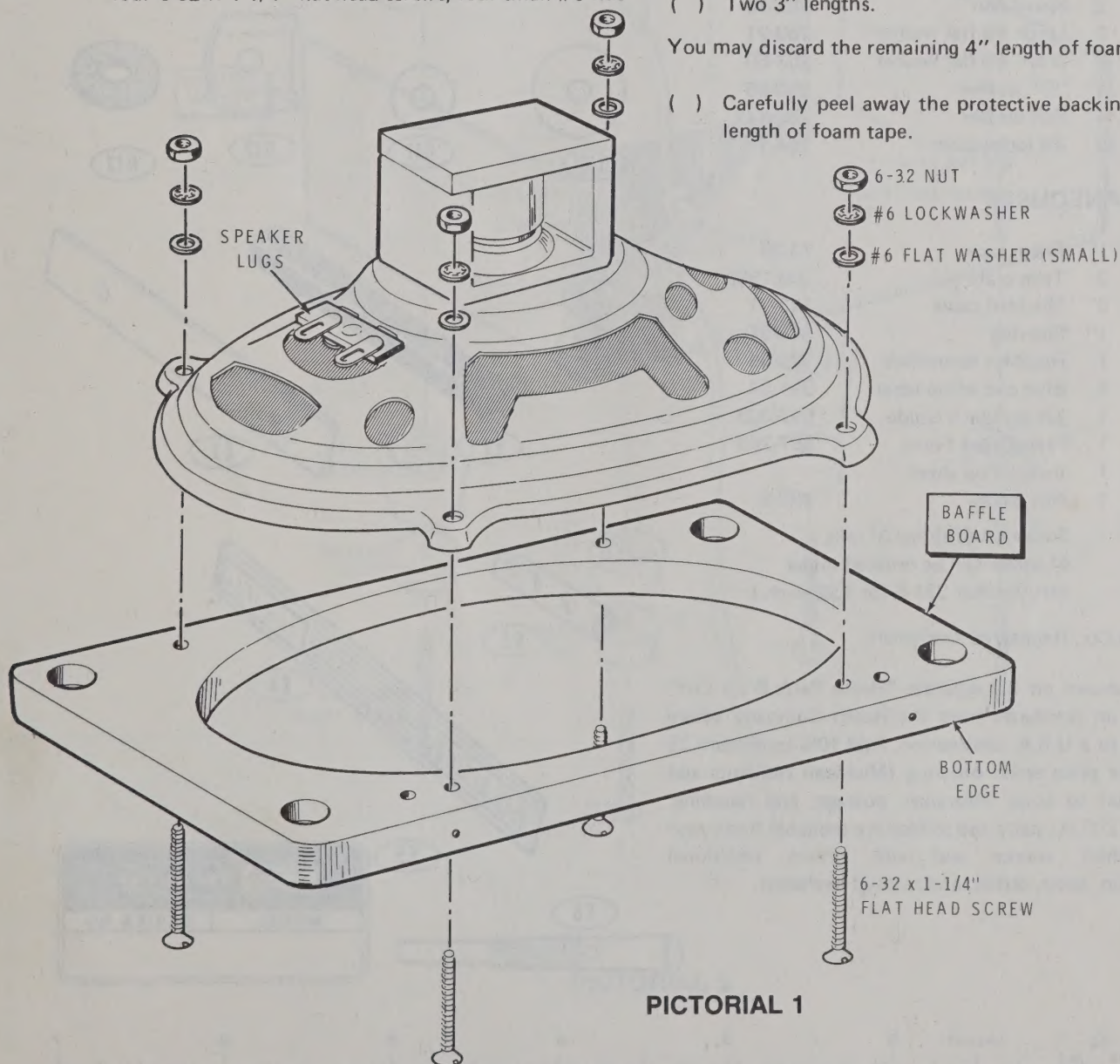
Refer to Pictorial 2 for the following steps.

Cut the following lengths of foam tape.

- ( ) Two 1" lengths.
- ( ) Two 3" lengths.

You may discard the remaining 4" length of foam tape.

- ( ) Carefully peel away the protective backing from a 1" length of foam tape.



PICTORIAL 1



KEY No.	QTY.	DESCRIPTION	PART No.
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## HARDWARE

D1	( )	2	#6 x 5/8" sheet-metal screw	250-12
D2	( )	2	#6 x 3/4" wood screw	250-57
D3	( )	2	6-32 x 1-1/4" screw	250-79
D4	( )	2	6-32 x 3/8" screw	250-89
D5	( )	4	6-32 x 7/8" phillips head screw	250-227
D6	( )	2	#6 x 1-1/2" wood screw	250-388
D7	( )	4	6-32 x 1-1/4" flat head screw	250-1187
D8	( )	12	6-32 nut	252-3
D9	( )	2	Speed Nut*	252-10
D10	( )	2	Large #6 flat washer	253-21
D11	( )	8	Small #6 flat washer	253-60
D12	( )	1	"D" washer	253-89
D13	( )	4	Felt washer	253-112
D14	( )	12	#6 lockwasher	254-1

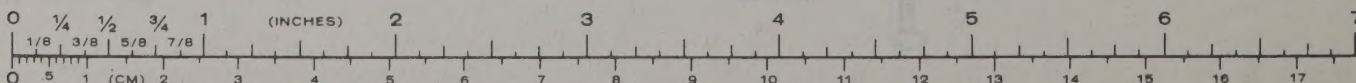
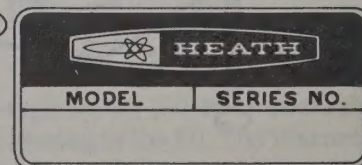
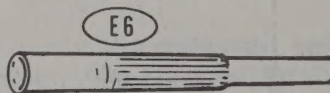
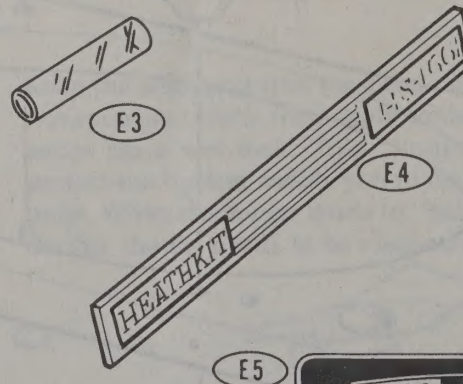
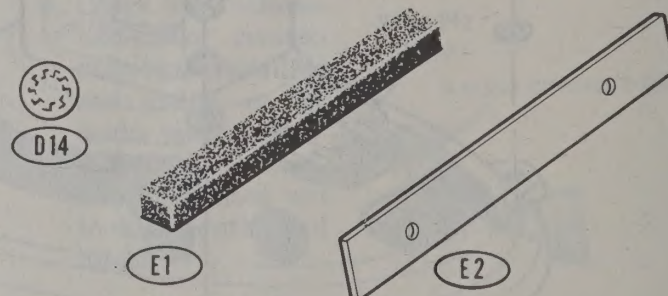
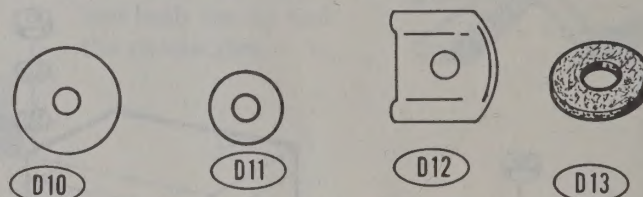
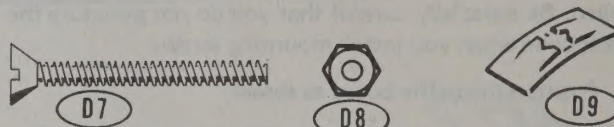
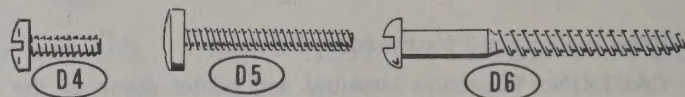
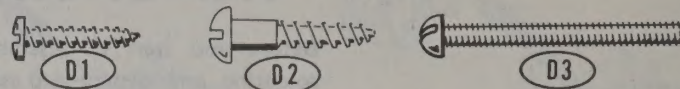
## MISCELLANEOUS

E1	( )	1'	Foam tape	73-39
E2	( )	2	Trim plate	205-1588
	( )	5'	Shielded cable	343-11
E3	( )	1"	Sleeving	346-51
E4	( )	1	Heathkit nameplate	391-96
E5	( )	1	Blue and white label	391-34
	( )	1	Kit Builder's Guide	597-308
	( )	1	Parts Order Form	597-260
	( )	1	Instruction sheet	
E6	( )	1	Nut starter	490-5

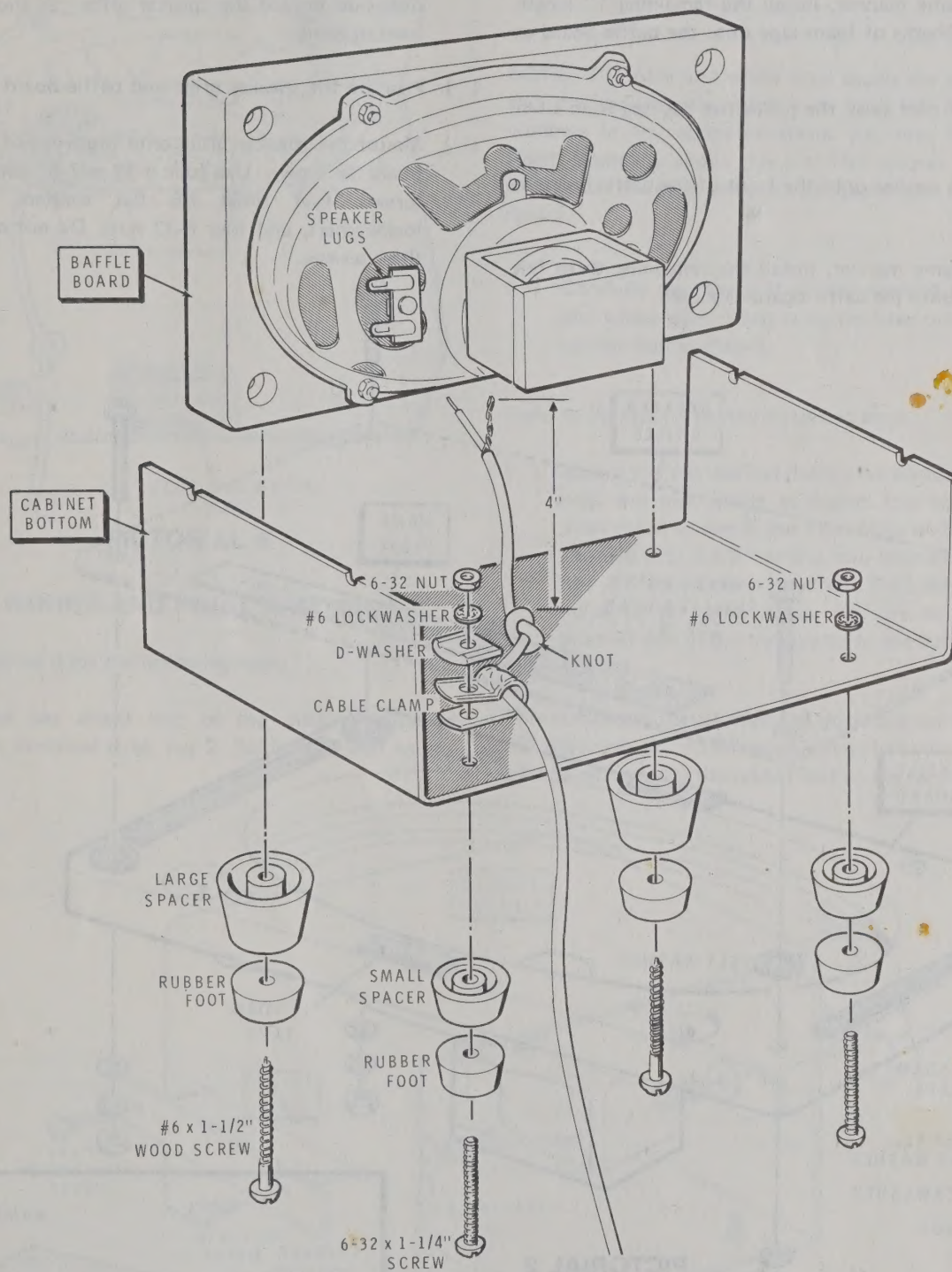
Solder (Additional 3' rolls of solder can be ordered under part number 331-6 for \$.25 each.)

\*Tinnerman Co., Registered Trademark

The prices shown on the separate "Heath Parts Price List" apply only on purchases from the Heath Company where shipment is to a U.S.A. destination. Add 10% (minimum 25 cents) to the price when ordering (Michigan residents add 4% sales tax) to cover insurance, postage, and handling. Outside the U.S.A., parts and service are available from your local Heathkit source and will reflect additional transportation, taxes, duties, and rates of exchange.



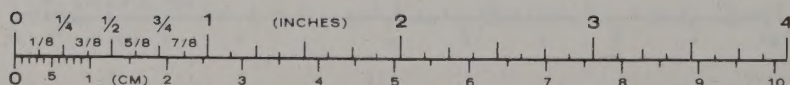
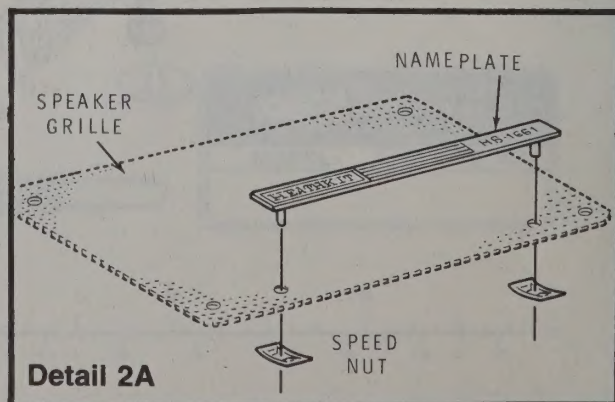
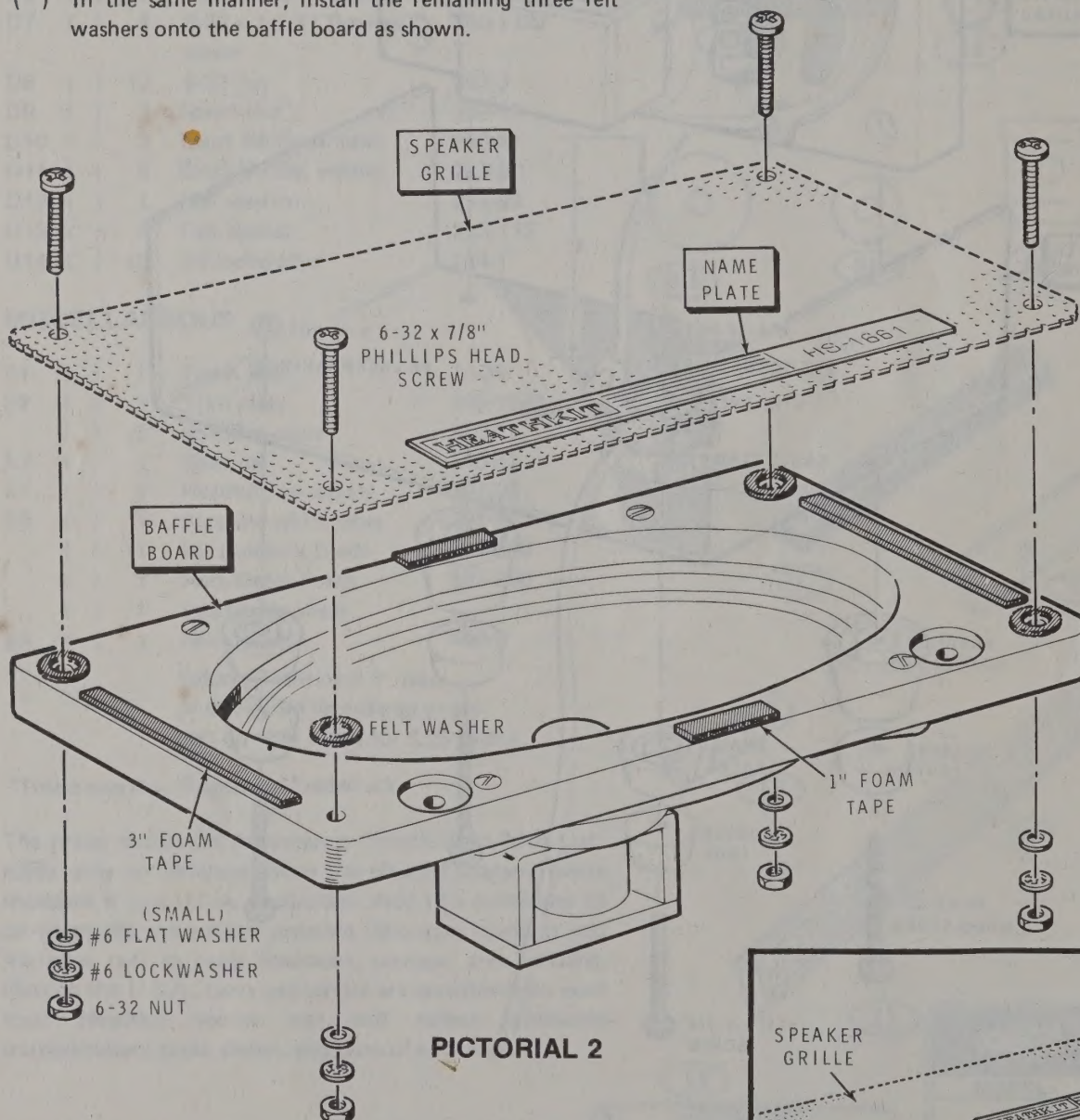




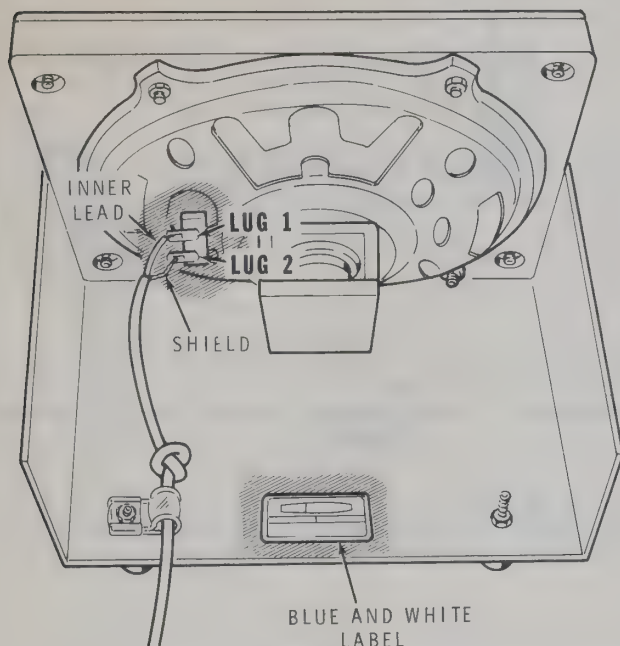
PICTORIAL 3



- ( ) Press the 1" length of foam tape onto the front of the baffle board as shown.
- ( ) In the same manner, install the remaining 1" length and 3" lengths of foam tape onto the baffle board as shown.
- ( ) Carefully peel away the protective backing from a felt washer.
- ( ) Press the washer onto the front of the baffle board as shown.
- ( ) In the same manner, install the remaining three felt washers onto the baffle board as shown.
- ( ) Refer to Detail 2A and install the Heathkit nameplate to the speaker grille with two speed nuts as shown. Push the speed nuts firmly onto the studs with the dish side toward the speaker grille as shown in the inset drawing.
- ( ) Position the speaker grille and baffle board as shown.
- ( ) Mount the speaker grille onto the front of the baffle board as shown. Use four 6-32 x 7/8" phillips head screws, four small #6 flat washers, four #6 lockwashers, and four 6-32 nuts. Do not overtighten these screws.





**PICTORIAL 4****SPEAKER WIRING AND FINAL ASSEMBLY**

Refer to Pictorial 4 for the following steps.

- ( ) Connect the shield lead of the shielded cable to speaker terminal strip, lug 2. Solder the lead to the lug.

- ( ) Connect the center lead of the shielded cable to speaker terminal strip, lug 1. Solder the lead to the lug.

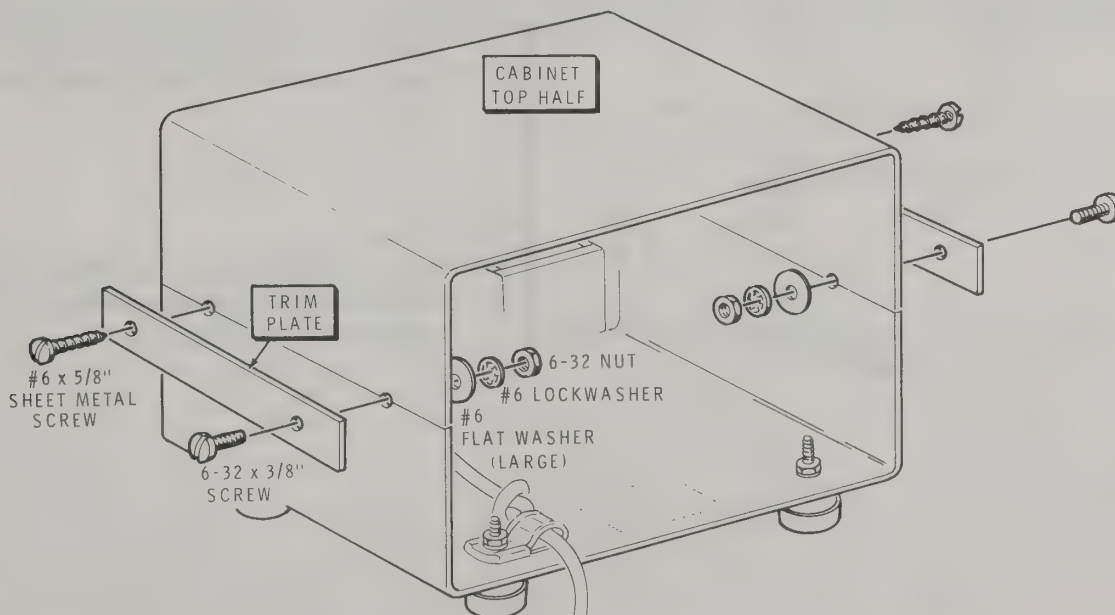
**NOTE:** The blue and white label shows the model number and production series number of your kit. Refer to these numbers in any communications you may have with the Heath Company about this kit. This assures you that you will receive the most complete and up-to-date information in return.

- ( ) Carefully peel away the paper backing from the blue and white label. Then press the label onto the bottom cabinet half as shown.

Refer to Pictorial 5 for the following steps.

- ( ) Secure the top cabinet half to the bottom cabinet half with the trim plates as shown. Use two #6 x 5/8" sheet metal screws in the front holes in the trim plates. Use two 6-32 x 3/8" screws, two large #6 flat washers, two #6 lockwashers, and two 6-32 nuts in the rear holes in the trim plates. Be sure to position the brushed side of the trim plates to the outside.

This completes the assembly of your Station Speaker. You will have two #6 x 3/4" wood screws left over. They can be used to mount only the rubber feet to the cabinet front.

**PICTORIAL 5**



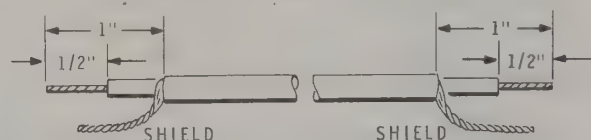
## BAFFLE BOARD MOUNTING

Refer to Pictorial 3 for the following steps.

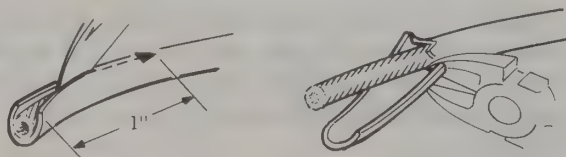
- ( ) Mount the baffle board, two large spacers, and two rubber feet to the bottom cabinet half as shown. Use two #6 x 1-1/2" wood screws. Do not overtighten these screws. NOTE: If you want to mount the rubber feet without the large spacers, use two #6 x 3/4" wood screws instead of #6 x 1-1/2" screws.

- ( ) Refer to Detail 3A and prepare the ends of the shielded cable as shown.

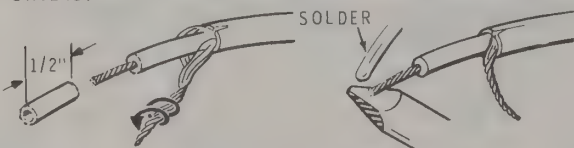
CUT THE CABLE ACCORDING TO THE DIMENSIONS BELOW. PREPARE EACH END AS SHOWN.



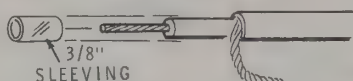
TAKING CARE NOT TO CUT THE OUTER SHIELD OF VERY THIN WIRES, REMOVE THE OUTER INSULATION.



TWIST THE SHIELD WIRES INTO ONE STRAND. REMOVE THE INNER INSULATION. THEN APPLY A SMALL AMOUNT OF SOLDER TO THE END OF THE INNER LEAD AND THE SHIELD.



SLIDE 3/8" OF SLEEVING OVER THE INNER LEAD INSULATION AT ONE END OF THE CABLE.

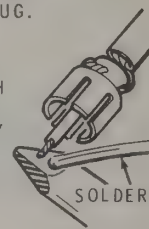


Detail 3A



INSERT THE INNER LEAD AND TEFLON SLEEVE THROUGH THE PLUG AND WRAP THE SHIELD AROUND THE PLUG.

APPLY HEAT TO THE TIP OF THE PIN ONLY LONG ENOUGH FOR THE SOLDER TO BE DRAWN UP INTO THE PIN BY CAPILLARY ACTION.

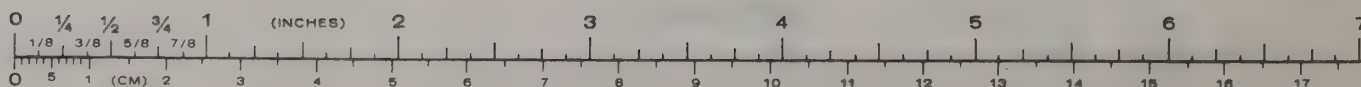


SOLDER THE SHIELD ONTO THE PLUG.

CUT OFF EXCESS WIRE FROM THE TIP OF THE PIN.

Detail 3B

- ( ) Refer to Detail 3B and install a phono plug on one end of the shielded cable as shown.
- ( ) Tie a knot in the shielded cable 4" from the end without the phono plug as shown.
- ( ) Slip the cable clamp over the shielded cable just behind the knot as shown.
- ( ) Mount the cable clamp, a small spacer, and a rubber foot to the bottom cabinet half as shown. Use a 6-32 x 1-1/4" screw, a "D" washer, a #6 lockwasher, and a 6-32 nut.
- ( ) Mount a small spacer and a rubber foot to the bottom cabinet half as shown. Use a 6-32 x 1-1/4" screw, a #6 lockwasher, and a 6-32 nut.





## YOUR HEATHKIT 90-DAY FULL WARRANTY

During your first ninety (90) days of ownership, Heath Company will replace or repair free of charge — as soon as practical — any parts which are defective, either in materials or workmanship. You can obtain parts directly from Heath Company by writing us or telephoning us at (616) 982-3571. And we'll pay shipping charges to get those parts to you — anywhere in the world.

We warrant that, during the first ninety (90) days of ownership, our products, when correctly assembled, calibrated, adjusted, and used in accordance with our printed instructions, will meet published specifications.

If a defective part or error in design has caused your Heathkit product to malfunction during the warranty period, through no fault of yours, we will service it free upon delivery at your expense to the Heath factory, Benton Harbor, Michigan, or to any Heathkit Electronic Center (units of Schlumberger Products Corporation), or through any of our authorized overseas distributors.

You will receive free consultation on any problem you might encounter in the assembly or use of your Heathkit product. Just drop us a line or give us a call. Sorry, we cannot accept collect calls.

Our warranty, both express and implied, does not cover damage caused by use of corrosive solder, defective tools, incorrect assembly, misuse, fire, customer-made modifications, flood or acts of God, nor does it include re-imbursement for customer assembly or set-up time. The warranty covers only Heath products and is not extended to non-Heath allied equipment or components used in conjunction with our products or uses of our products for purposes other than as advertised.

And if you are dissatisfied with our service — warranty or otherwise — or our products, write directly to our Director of Customer Services, Heath Company, Benton Harbor, Michigan, 49022. Telephone (616) 982-3524. He'll make certain your problems receive immediate, personal attention.

HEATH COMPANY  
BENTON HARBOR, MI. 49022

Prices and specifications subject to change without notice.

## SPECIFICATIONS

Speaker Size . . . . .	5" x 7" oval.
Impedance . . . . .	3.5 ohms.
Frequency Response . . . . .	300 to 3000 Hz.
Magnet Weight . . . . .	3.16 oz.
Cabinet . . . . .	Aluminum, green spatter finish.
Dimensions . . . . .	9" wide x 6-5/8" wide x 5-5/8" deep.
Net Weight . . . . .	3-1/4 lbs.

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The Heath Company reserves the right to discontinue products and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.



**FOR PARTS REQUESTS ONLY**

- Be sure to follow instructions carefully.
- Use a separate letter for all correspondence.
- Please allow 10 - 14 days for mail delivery time.

**DO NOT WRITE IN THIS SPACE****INSTRUCTIONS**

- Please print all information requested.
- Be sure you list the correct **HEATH** part number exactly as it appears in the parts list.
- If you wish to prepay your order, mail this card and your payment in an envelope. Be sure to include 10% (25¢ minimum, \$3.50 maximum) for insurance, shipping and handling. Michigan residents add 4% tax.

Total enclosed \$\_\_\_\_\_

- If you prefer COD shipment, check the COD box and mail this form. COD ☐

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

The information requested in the next two lines is not required when purchasing nonwarranty replacement parts, but it can help us provide you with better products in the future.

Model # \_\_\_\_\_ Invoice # \_\_\_\_\_

Date \_\_\_\_\_ Location \_\_\_\_\_

Purchased \_\_\_\_\_ Purchased \_\_\_\_\_

LIST **HEATH**  
PART NUMBER

QTY.

PRICE  
EACHTOTAL  
PRICE

TOTAL FOR PARTS

HANDLING AND SHIPPING

MICHIGAN RESIDENTS ADD 4% TAX

TOTAL AMOUNT OF ORDER

SEND TO:

**HEATH COMPANY**  
BENTON HARBOR  
MICHIGAN 49022  
**ATTN: PARTS REPLACEMENT**

Phone (Replacement parts only): 616 982-3571

THIS FORM IS FOR U.S. CUSTOMERS ONLY  
OVERSEAS CUSTOMERS SEE YOUR DISTRIBUTOR

**FOR PARTS REQUESTS ONLY**

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NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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Date \_\_\_\_\_ Location \_\_\_\_\_

Purchased \_\_\_\_\_ Purchased \_\_\_\_\_

LIST **HEATH**  
PART NUMBER

QTY.

PRICE  
EACHTOTAL  
PRICE

TOTAL FOR PARTS

HANDLING AND SHIPPING

MICHIGAN RESIDENTS ADD 4% TAX

TOTAL AMOUNT OF ORDER

SEND TO:

**HEATH COMPANY**  
BENTON HARBOR  
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**ATTN: PARTS REPLACEMENT**

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